Title

Effect of Christmas Holidays on Type 1 Diabetes Mellitus in Users of Glucose Flash Systems

Abstract

Objective: Christmas holidays can impact weight and glycemic control in type 2 diabetes, but their effect on type 1 diabetes (T1D) remains understudied. This study assessed how Christmas holidays affect individuals with T1D who use flash continuous glucose monitoring systems. Methods: This retrospective study involved 812 adults diagnosed with T1D recruited from 3 hospitals. Clinical, anthropometric, and socioeconomic data were collected. Glucose metrics from 14 days before January 1st, and before December 1st and February 1st as control periods, were recorded. Analyses adjusted for multiple variables were conducted to assess the holiday season's impact on glycemic control. Results: The average time in range during the holidays (60.0 ± 17.2%) was lower compared to December (61.9 ± 17.2%, P <.001) and February (61.7 ± 17.7%, P <.001). Time above range (TAR > 180 mg/dL) was higher during Christmas (35.8 ± 18.2%) compared to December (34.1 ± 18.3%, P <.001) and February (34.2 ± 18.4%, P <.001). Differences were also observed in TAR >250 mg/dL, coefficient of variation, and average glucose (P <.05). No differences were found in time below range or other metrics. Linear regression models showed that the holidays reduced time in range by 1.9% (β = −1.92, P =.005) and increased TAR >180 mg/dL by 1.8% (β = 1.75, P =.016). Conclusion: Christmas holidays are associated with a mild and reversible deterioration in glucose metrics among individuals with T1D using flash continuous glucose monitoring, irrespective of additional influencing factors. These discoveries can be useful to advise individuals with diabetes during the festive season and to recognize potential biases within studies conducted during this timeframe.

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